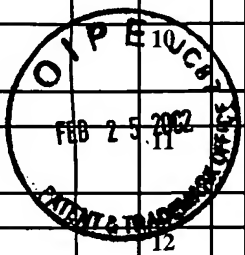




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Sheet 1 of 1

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE				ATTY. DOCKET NO. S00-229/US		SERIAL NO. Not assigned	
LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)				APPLICANT Michael E. Webber et al.			
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	I						
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OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)							
	1	R. K. Hanson et al.; "High-resolution spectroscopy of combustion gases using a tunable ir diode laser;" AUGUST 1977/VOL. 16, NO. 8/APPLIED OPTICS, PP 2045					
	2	Alan C. Eckbreth; "Recent advances in laser diagnostics for temperature and species concentration in combustion;" EIGHTEENTH SYMPOSIUM (INTERNATIONAL) ON COMBUSTION, THE COMBUSTION INSTITUTE, 1981					
	3	Ronald K. Hanson; "Combustion diagnostics: planar imaging techniques;" TWENTY-FIRST SUMPOSIUM (INTERNATIONAL) ON COMBUSTION/THE COMBUSTION INSTITUTE, 1986/PP. 1677-1691					
	4	Danel T. Cassidy et al.; "Trace gas detection with short-external-cavity InGaAsP diode laser transmitter modules operating at 1.58 um;" APPLIED OPTICS/VOL. 27, NO. 13/1 JULY 1988					
	5	Brian F. Ventrudo et al.; "Operating characteristics of a tunable diode laser absorption spectrometer using short-external-cavity and DFB laser diodes;" 20 NOVEMBER 1990/VOL. 29, NO.33/ APPLIED OPTICS					
	6	Louis C. Philippe et al; "Laser-absorption mass flux sensor for high-speed airflows;" OPTICS LETTERS/VOL. 16, NO.24/DECEMBER 15, 1991					
	7	M. P. Arroyo et al.; "Absorption measurements of water-vapor concentration, temperature, and line-shape parameters using a tunable InGaAsP diode laser;" APPLIED OPTICS/ VOL. 32, NO. 30/ 20 OCTOBER 1993, PP. 6104					

	8	M. P. Arroyo et al.; "Diode-laser absorption technique for simultaneous measurements of multiple gas dynamic parameters in high-speed flows containing water vapor;" APPLIED OPTICS/ VOL. 33, NO. 15/ 20 MAY 1994, PP. 3296
	9	M. pilar Arroyo; "Dual diode-laser fiber-optic diagnostic for water-vapor measurements;" JULY 15, 1994/ VOL. 19, NO. 14/ OPTICS LETTERS, PP. 1091
	10	D. S. Beer et al.; "Multiplexed diode-laser sensor system for simultaneous H ₂ O, O ₂ , and temperature measurements;" OPTICS LETTERS/ VOL. 19, NO. 22/ NOVEMBER 15, 1994
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	12	David M. Sonnenfroh et al.; "Diode laser sensors for combustor and aeroengine emissions testing: applications to CO, CO ₂ , OH, and NO;" 19 TH AIAA ADVANCED MEASUREMENT AND GROUND TESTING TECHNOLOGY CONFERENCE, JUNE 17-20, 1996/ NEW ORLEANS, LA
	13	H. Q. Le, et al.; "Broad wavelength tenability of grating-coupled external cavity midinfrared semiconductor lasers;" APPL. PHYS. LETT. 69 (19), 4 NOVEMBER 1996, PP. 2804
	14	M. Gabrysch; "Simultaneous detection of CO and CO ₂ using a semiconductor DGB diode laser at 1.578 um;" APPL. PHYS. B65, 75-79 (1997)
	15	Anders P. Larson et al.; "Evaluation of distributed bragg reflector lasers for high-sensitivity near-infrared gas analysis;" OPT. ENG. 36 (1) 117-123 (JANUARY 1997)
	16	R. K. Hanson et al.; "Recent advances in laser-based combustion diagnostics;" 35 TH AEROSPACE SCIENCES MEETING & EXHIBIT, JANUARY 6-10, 1997/ RENO, NV
	17	R. Villarreal et al.; "Temperature and CO ₂ concentration profiles in flames measured by laser absorption tomography;" 35 TH AEROSPACE SCIENCES MEETING AND EXHIBIT, JANUARY 6-9, 1997/RENO, NV
	18	David Christian Hovde et al; "Wavelength modulation detection of water vapor with a vertical cavity surface-emitting laser;" 20 FEB. 1997/ VOL. 36, NO. 6/APPLIED OPTICS
	19	Shang-I Chou et al.; "Diode laser absorption measurements of CH ₃ Cl and CH ₄ near 1.65um;" APPLIED OPTICS/ VOL. 36, NO. 15/20 MAY 1997
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	21	Bernard L. Upschulte et al.; "diode laser measurements of line strengths and self-broadening parameters of water vapor between 300 and 1000K near 1.31 um;" J. QUANT. SPECTROSC. RADIAT. TRANSFER VOL. 59, NO. 6,PP.653-670, 1998
	22	R. M. Mihalcea et al.; "Advanced diode laser absorption sensor for in situ combustion measurements of CO ₂ , H ₂ O, and gas temperature;" TWENTY-SEVENTH SYMPOSIUM (INTERNATIONAL) ON COMBUSTION/ THE COMBUSTION INSTITUTE, 1998/ PP. 95-101

23	Edward R. Furlong et al.; "Real-time adaptive combustion control using diode-laser absorption sensors;" TWENTY-SEVENTH SYMPOSIUM (INTERNATIONAL) ON COMBUSTION/ THE COMBUSTION INSTITUTE, 1998/ PP. 103-111				
24	Bernard L. Upschulte et al.; "In-situ, multi-species combustion sensor using a multi-section diode laser;" 36 TH AEROSPACE SCIENCES MEETING & EXHIBIT, JANUARY 12-15, 1998/ RENO, NV				
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FOREIGN PATENT DOCUMENTS

I	J	K	DOCUMENT NUMBER	ISSUE DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
								YES	NO

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

m	L	D. M. Sonnenfroh et al.; "Observation of CO and CO ₂ absorption near 1.57 um with an external-cavity diode laser;" Appl. Opt., 36 (15): 3298-3300, 1997
	M	R. M. Mihalcea et al.; "Diode-Laser sensor for measurements of CO, CO ₂ , and CH ₄ in combustion flows;" Appl. Opt., 36:8745-8752, 1997
	N	R. M. Mihalcea et al.; "Diode-Laser absorption sensor for combustion emission measurements;" Meas. Sci. Technol. 9: 327-338, 1998
	N1	R. M. Mihalcea et al.; "Diode-laser absorption measurements CO ₂ , H ₂ O, N ₂ O, and NH ₃ near 2.0 um;" Appl. Phys. B, 67: 283-288, 1998
	N2	R. M. Mihalcea et al.; "Diode-Laser measurements of CO ₂ near 2.0 um at elevated temperatures;" Appl. Opt., 37 (36): 8341-8347, 1998
	N3	V. Nagali et al.; "Tunable diode-laser absorption measurements of methane at elevated temperatures;" Appl. Opt., 35 (21): 4026-4032, 1996
m	N4	L. S. Roghman; "The HITRAN molecular spectroscopic database and HAWKS (HITRAN atmospheric workstation);" 1996 edition. J. Quant. Spectrosc. Radiat. Transfer, 60:665-710, 1998

<i>m</i>	N5	L. S. Rothman et al.; "Energy levels, intensities, and linewidths of atmospheric carbon dioxide bands;" J. Quant. Spectrosc. Radiat. Transfer, 48:537-566, 1992
	N6	L. Rosenmann et al.; "Accurate calculated tabulations of IR and Raman CO ₂ , H ₂ O, N ₂ , O ₂ in the 300-2400 K temperature range;" Appl. Opt., 27 (18): 3902-3907, 15 September 1988
	N7	S. T. Sanders et al.; "Diode laser absorption sensor for measurements in pulse detonation engines;" Paper number 2000-0358, AIAA 38 th Aerospace Sciences Conference, Reno, NV, January, 2000
	N8	D. S. Baer et al.; "Scanned- and fixed-wavelength absorption diagnostics for combustion measurements using multiplexed diode lasers;" AIAA Journal, 34 (3): 489-493, March 1996
	N9	Mark G. Allen et al.; "Diode laser absorption sensors for gas dynamic and combustion flows;" Measurement Science and Technology 9(4), 545-562(1998)
	N10	Michael E. Webber et al.; "In situ combustion measurements of CO, CO ₂ , H ₂ O and temperature using diode laser absorption sensors;" Proceedings of the Combustion Institute, Volume 28, 2000/pp. 407-413
	N11	Michael E. Webber et al.; "Measurements of NH ₃ and CO ₂ with distributed-feedback diode lasers near 2.0 um in bioreactor vent gases;" 20 August 2001/Vol. 40, No. 24/ Applied Optics
<i>m</i>	N12	"Final report: Multiplexed diode-laser gas sensor system for in situ multi-species emissions measurements;" National Center for Environmental Research, Office of Research and Development, U.S. Environmental Protection Agency; Last updated: March 9, 2001
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